

MALDI-IMAGING FOR PROTEOMICS OF PROTEASE INHIBITORS

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MALDI-imaging mass spectrometry (MALDI-IMS) is a novel experimental approach to visualize the distribution of biomolecules on tissue sections [1]. Proteins, peptides, lipids and metabolites can be analyzed in a selective and/or highthroughput manner. The application of IMS allows acquisition of protein and peptide profiles, biomarker discovery, biomarker localization, tissue classification or cancer diagnosis and prognosis [1,2]. In this study we report the distribution of protease inhibitors in several mouse tissues, after intraperitoneal injection.

Mice were administered twice daily with 250 mg/kg of the inhibitor(s) and they were sacrificed one hour after the second dose. We followed standard protocols for sample preparation, generation of tissue slices and analyses of the MALDI spectra [3 & Bruker-protocols]. The localization of the protease inhibitors and their potential derivatives on the tissues were analyzed and we also compared their distribution among the tissues. One of our goals is to investigate the differential distribution and fates of such molecules when administered in vivo in mice, having in mind potential pharmacological strategies [4].

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[4] Arolas JL, Vendrell J, Aviles FX & Fricker LD (2007) *Curr Pharm* 13, 349-366.